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Ethno-medicinal Survey for Some Wild Plants of Muzaffarabad, Azad Jammu & Kashmir, Pakistan

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ETHNO-MEDICINAL SURVEY FOR SOME WILD PLANTS OF MUZAFFARABAD, AZAD JAMMU & KASHMIR, PAKISTAN

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ABSTRACT

Wild plants have always held economic, nutritional and medicinal value for human beings. Present work is the study of local information of some wild plants being used for remedial purposes in District Muzaffarabad, Azad Jammu and Kashmir, Pakistan. The indigenous knowledge of local conventional uses was collected through survey and personal interviews during field trips. A total of 50 plant species were identified by taxonomic description using field guides and locally by medicinal knowledge of people living in the area. About 150 informers were interviewed randomly to record local names and ethno-medicinal uses of different plant species.

Keywords: Medicinal survey, traditional use, indigenous knowledge, Muzaffarabad

INTRODUCTION

The consciousness of ethno-botany increased use and achievement in experimentation on plants that lead to advancements in production of food and medication (Campbell et al., 2002). However, the current generation significantly lacks the valuable knowledge of plants to the extent where the indigenous ethno-botanical information is at a risk of extinction (Shinwari et al., 2002). Hence, there is an urgent need to secure the traditional knowledge of medicinal value of wild plants.

In addition, modern drugs are being used extensively but have a very high cost. However, conventional drugs are still a major part of healthcare regime. This is especially true for complicated cases, like those involving surgical operations. Particularly, in serious cases such as, in postpartum women, when the mother's physical condition quickly weakens due to excessive loss of blood. In such conditions, therapeutic plants are used in postpartum herbal baths and food supplements for their antioxidant, anti-

inflammatory and antimicrobial properties (Hussain et al., 2013).

The application of plants by man dates back to the beginning of human life on globe. Initially, the use of plants was limited to food, drugs and shelter but with the passing of time man discovered the value of plants for several other uses. A number of manuscripts on remedial plants and their native uses have been published from different parts of the country (Shinwari and Malik, 1989; Bhatti et al., 2001; Qureshi and Bhatti, 2008; Qureshi et al., 2002-2009; Ahmed et al., 2009).

Khan et al. (2012) investigated the ethnoveterinary medicinal uses of plants of Poonch valley, Azad Kashmir. They studied 19 medicinal plants belonging to 14 families. Jan et al. (2011) carried an ethnobotanical exploration in Dir Kohistan valley. They recorded 65 species out of which 62 belonged to the angiosperm clade while 3 belonged to the gymnosperm clade. These plants are used as medicine as well as for other purposes.

Arshad et al. (2011) reported 48 plant species identified by their taxonomic description and medicinal importance in

District Sialkot, Pakistan. Yadave and Agarwala (2011) reported seven medicinal plants from North-eastern India. Through their phytochemical analysis they concluded that extracts of these plants contain medicinally important bioactive compounds that are used for treatment of different diseases.

MATERIALS AND METHODS

Study area

Muzaffarabad is the capital of the Azad Jammu & Kashmir. It is situated between 34.24° latitude and 73.22° longitude in North-East of Pakistan. It extends over an area of 2496 square Km. The weather of this region falls under sub-tropical highland type. The temperature ranges between 42°C to -3°C, with average annual rainfall varying between 1000 to 1300 mm (GOP, 2004). The topography of Muzaffarabad is hilly and mountainous. The forest types of Muzaffarabad include Sub Tropical Pine Forests and Dry Sub Tropical Scrub Forests (Termizi, 2001). Muzaffarabad District is on the banks of the Jhelum and Neelum rivers. Many citizens lead an uncomplicated and simple life knowing nothing about botany, chemistry and pharmacy. However, they possess traditional medicinal knowledge that they use in day to day life.

The general information about the study area for the collection of medicinal plants was collected from the local people of that area before starting of the field work. Different field trips were arranged and plants were collected from study area during session (2013). About 7 different sites of Muzaffarabad including Sarran, Peer Chinnassi, University of Azad Jammu & Kashmir, Domail, Suberi, Chella bandi, Pani Gran were visited and local plants that were being used in those areas for the treatment of different diseases were collected.

These plants were showed to local elders, hakims and herbalists for the collection of information about medicinal uses by using different self-made questionnaires subsequently in which different question were asked about the uses of local wild plants. Around 150 local people including 7 hakims were interviewed, who provided information on the actual medicinal uses of these plants.

As per methodology of herbarium, the collected specimens of plants were appropriately pressed and then identified (Nasir et al., 1970-2004). The collection was then deposited in the herbarium of Botany Division, Institute of Pure & Applied Biology Bahauddin Zakariya University Multan.

RESULTS

The present study is based on local information of those medicinal plants that are commonly used in Muzaffarabad, Azad Kashmir. From the study area a total of 50 plant species belonging to 31 families were reported. The main focus of this research work was on the traditional remedial uses of plants of the study area. During field survey 150 local informers were interviewed using questionnaires for gathering information about medicinal uses of plants. The results obtained are given below.

(1) *Abutilon indicum* L. Sweet

- **Family:** Malvaceae
- **Common name:** Jhumka, Karandi, Indian Mallow
- **Part used:** whole plant
- **Flower color:** bright yellow, orange-yellow.
- **Flowering period:** August to September
- **Habit and habitat:** perennial shrub and found in sub-Himalayan region.

Medicinal Uses

It is astringent, analgesic, anti-inflammatory, anthelmintic, demulcent, sweet, digestive, laxative, expectorant, diuretic, and cooling. It is functional in gout, tuberculosis, ulcers, bleeding disorders, and worms. It is also used in toothache and tender gums. Leaves are locally useful for boils and ulcers. Roots are used in fever, chest infection and urethritis.

(2) *Achyranthes aspera* L.

- **Family:** Amaranthaceae
- **Common name:** Puthknda.
- **Part used:** whole plant.
- **Flower color:** papery
- **Flowering period:** May to December.
- **Habit and habitat:** wild herb and terrestrial.

Medicinal Uses

Plant is purgative, diuretic, and astringent. It is applied for dropsy, piles, skin eruptions and colic. Seeds are used for emetic purposes while the root is used as an astringent. Dried powder of this plant is applied for toothache and leaves are utilized against snakebites.

(3) *Achillea millefolium* L.

- **Family:** Asteraceae
- **Common name:** Sultani booti
- **Part used:** whole plant
- **Flower color:** white to pink.
- **Flowering period:** July to September.
- **Habit and habitat:** It is a herbaceous perennial plant found in the Himalayas at an altitude of 1,000 - 3,600 m from Kashmir to Kumaun.

Medicinal Uses

The flower is used as laxative, diuretic, stimulant and tonic for the brain as well as female reproductive parts. The plant is mostly used to treat colds, fever and purification of blood. Fresh leaf decoction is traditionally used as a cure for colds and other ailments, common in childhood.

(4) *Adiantum capillus-veneris* Linn.

- **Family:** Adiantaceae
- **Common name:** Hansraj, Sraj,
- **Part used:** leaves
- **Flower color:** no flower
- **Flowering period:** May to August
- **Habit and habitat:** a wild herb, found in cold, moist, and shady places along water courses in moist clay.

Medicinal Uses

It is used for cough, jaundice, cold, chest pain, asthma, fever, and measles.

(5) *Aerua sanguinilenta* L.

- **Family:** Amaranthaceae
- **Common name:** Kannada
- **Part used:** especially leaves but also roots and flowers.
- **Flowering color:** white to pale pink or pale brown
- **Flowering period:** September to October.
- **Habit and habitat:** plant is a perennial herb

Medicinal Uses

Leaves and small twigs are used as a tea against many ailments. Especially used for the diseases of the lungs, colds, catarrh, angina, chest discomfort and pneumonia. Moreover, it is also used for the treatment of kidney disease, infections, bladder infections, headaches, liver

disorders and depression. An extract of this plant is effectively used in Pakistan for healing of wounds. This plant also has diuretic properties.

(6) *Ajuga bracteosa* Wall. ex Benth.

- **Family:** Labiatae
- **Common name:** Boti
- **Part used:** leaves
- **Flowering color:** blue, purple, pink, or white flowers, depending on variety
- **Flowering period:** blooms appear in spring to early summer
- **Habit and habitat:** perennial herb in moist ground and grassy slopes

Medicinal Uses

Leaves are bitter and used for the treatment of fever. The dried young leaves are powdered and eaten three times a day for throat infection and fever.

(7) *Amaranthus viridis* Linn.

- **Family:** Amaranthaceae
- **Common name:** Chalwerae
- **Part used:** whole plant
- **Flower color:** green to brown, white
- **Flowering period:** April to May
- **Habit and Habitat:** herb and terrestrial

Medicinal Uses

The soft roots of this plant are boiled and used as laxative. The upper areas of the leaves are mixed with mustard oil then warmed lightly and are applied to swollen areas and boils.

(8) *Anagallis arvensis* L.

- **Family:** Primulaceae
- **Common name:** Billi boti
- **Part used:** all parts are used

- **Flower color:** red-orange, occasionally white or blue
- **Flowering period:** June to September
- **Habit and habitat:** an herbaceous annual plant on roadsides and waste places, usually in sandy soil.

Medicinal Uses

The scarlet pimpernel was considered as a remedial herb, especially for treatment of epilepsy and mental problems. The entire plant is used as antitussive, cholagogue, diaphoretic, diuretic, expectorant, nervine, purgative, stimulant and vulnerary. It can be taken internally or applied externally as a poultice. A mixture is applied for the treatment of dropsy, skin infections and disorders of the liver and gall bladder.

(9) *Artemisia maritima* L.

- **Family:** Asteraceae
- **Common name:** Bsepuk
- **Part used:** Leaves and Stems
- **Flower color:** yellowish or brownish
- **Flowering period:** August and September
- **Habit and habitat:** It is a deciduous shrubby plant; it cannot grow in shaded places. It prefers dry or wet soil and can also tolerate drought.

Medicinal Uses

Plant is used for its antiseptic, anti-inflammatory and antimalarial properties. Leaves are used for cooling purposes. Plant powder is believed to be effective against intestinal worms. The plant is also utilized for brooms.

(10) *Berberis lycium* Royle

- **Family:** Berberidaceae

- **Local name:** Sumblu
- **Flower color:** yellow
- **Flowering period:** April to June
- **Habit & Habitat:** It is a shrubby plant, found at open hill side usually on hot dry slopes to 3000m in Kashmir.

Medicinal Uses

Root is sour with unlikable taste, used for the treatment of spleen problems, as a tonic. Intestinal astringent, good for cough, chest and throat problems and useful application to boils.

(11) *Bergenia stracheyi* (H. & T.) Eng

- **Family:** Saxifragaceae
- **Common name:** Pashanbheda
- **Part used:** whole plant
- **Flower color:** pink
- **Flowering period:** June-August
- **Habit and habitat:** It is a semi-deciduous perennial plant that commonly grows on moist rocky slopes in Kashmir on much higher and colder altitudes.

Medicinal Uses

The whole plant is used to treat urinary troubles in the form of juice or powder. The leaf juice is also used as drops to reduce earaches. Root is applied as a tonic in the curing of fever, diarrhea and pulmonary affections. It is also used for the treatment of coughs, colds, hemorrhoids, asthma and urinary problems.

(12) *Bergenia ciliata* (Haw.) Sternb.

- **Family:** Saxifragaceae
- **Common name:** Zakham-e-Hayat
- **Part used:** rhizome
- **Flower color:** pink

- **Flowering period:** March to May
- **Habit and habitat:** a perennial rhizomatous herb, found on rocky slope crevices in black loamy soil.

Medicinal Uses

It is used for ulcers, back pain, piles, dysentery, and external or internal wounds.

(13) Botanical Name: *Convolvulus arvensis* Linn.

- **Family:** Convolvulaceae
- **Common name:** Khurru
- **Part used:** whole plant
- **Flower color:** light pink
- **Flowering period:** February to November
- **Habit and habitat:** a climbing, twining herb, found as weed in wheat fields and wet places in clay loam.

Medicinal Uses

The fresh leaves of this plant are used as fodder for cattle and also applied for removal of dandruff.

(14) *Calendula arvensis* L.

- **Family:** Asteraceae
- **Common name:** field marigold
- **Part used:** leaves, flower
- **Flower color:** bright yellow to yellow-orange
- **Flowering period:** June to November
- **Habit and habitat:** an annual herb; it cannot grow in shade. It prefers moist soil

Medicinal Uses

It is used for its astringent, expectorant and antispasmodic properties. A tea of the petals tones up the circulation

and, when taken regularly, can ease varicose veins.

(15) *Cannabis sativa* Linn.

- **Family:** Cannabinaceae
- **Common name:** Bhang
- **Part used:** leaves
- **Flower color:** green
- **Flowering period:** July to September
- **Habit and habitat:** It is a wild herb that typically grows in wet and waste places near houses and alongside roads.

Medicinal Uses

It is used for body inflammation, intoxication, loss of appetite in humans and abdominal swelling due to indigestion in cattle.

(16) *Carthamus lanatus* L.

- **Family:** Asteraceae
- **Common name:** distaff thistle
- **Part used:** full plant
- **Flower color:** yellow
- **Flowering period:** July through August
- **Habit and habitat:** Herb; mostly found amongst rocks, in dry hills and also uncultivated ground

Medicinal Uses

This plant is used to eliminate the diseases like anthelmintic, diaphoretic and febrifuge.

(17) *Carum carvi* L.

- **Family:** Apiaceae
- **Common name:** Caraway

- **Part used:** fruit, seed
- **Flower color:** white (occasionally reddish-red)
- **Flowering period:** June to August
- **Habit and habitat:** plant is biennial or once-flowering perennial herb and mostly found on meadows, banks, river banks, roadsides and yards.

Medicinal Uses

It is a well-known plant that is used as household medicine especially for digestive problems. Since it has antispasmodic properties it is used to soothe the digestive tract and due to carminative properties to relieve bloating. It is also applied as a laxative to stop griping. The seed of this plant is used for its antiseptic, antispasmodic, aromatic, carminative, digestive, emmenagogue, expectorant, galactagogue and stimulant properties.

(18) *Chenopodium ambrosioides* L.

- **Family:** Amaranthaceae
- **Common name:** Epazote
- **Part used:** leaf, whole plant, seed
- **Flower color:** yellow
- **Flowering time:** July to October
- **Habit and habitat:** forb/herb found at moist places.

Medicinal Uses

It is mostly used for removal of intestinal worms and parasites, skin parasites, lice, and ringworm. It is also used to treat different diseases like coughs, asthma, bronchitis, and other upper respiratory problems. It strengthens the stomach, liver and bowel for acid reflux, intestinal gas, cramping, chronic constipation, hemorrhoids, etc.

(19) *Chenopodium botrys* L.

- **Family:** Chenopodiaceae

- **Common name:** Jerusalem Oak Goosefoot
- **Part used:** whole plant
- **Flower color:** yellow-green
- **Flowering period:** July to October
- **Habit and habitat:** This is a shrubby herbaceous plant and is usually found at waste places, roadsides and disturbed soil. Valleys, river terraces, around houses and roadsides.

Medicinal uses

The plant is mostly used in the treatment of diseases like catarrh. It is used for its anti-asthmatic and anthelmintic properties and as a substitute for *C. ambrosioides*.

(20) *Cynodon dactylon* (L.) Pers.

- **Family:** Poaceae.
- **Common Name:** Khabal ghas.
- **Part used:** whole plant.
- **Flowering period:** throughout the year except December to February.
- **Habit and habitat:** wild herb and terrestrial.

Medicinal Uses

Root is diuretic and laxative. Floral parts are used as blood purifiers and also used against dysentery. Powder of grass is also used as stomachic medicine or tonic that promotes appetite or assists digestion.

(21) *Dryopteris odontoloma* (Moore) C. Chr.

- **Family:** Dryopteridaceae
- **Part used:** root
- **Flower color:** yellowish white

- **Habit and habitat:** fern, woodland, garden, dappled shade, shady edge.

Medicinal uses

This plant contains an active ingredient that paralyzes tapeworms and other internal parasites and is also used as a worm expellant. It is mostly used as non-oily purgative which used to expel the worms from the body. The root of this plant has toxic effect and its dosage is very critical.

(22) *Equisetum arvense*

- **Family:** Equisetaceae
- **Common name:** Horsetail
- **Part used:** stem
- **Flower color:** produces green spores, no flowers.
- **Flowering period:** April to May
- **Habit and habitat:** An herbaceous perennial plant mostly found in open fields, arable land, waste places, hedgerows and roadsides.

Medicinal uses

The plant is used in the treatment of different kinds of diseases such as diuretic, used for kidney and bladder problems, cystitis, urethritis, prostate disease and internal bleeding. Externally application of its decoction will prevent the bleeding of injury and encourage healing. It is also very effective for nose bleeds. This plant is also used in the treatment of cystitis and other problems of the urinary system.

(23) *Erodium cicutarium* (L.) L'Hérit. exAit

- **Family:** Geraneaceae
- **Common name:** Stork's Bill
- **Part used:** whole plant
- **Flower color:** bright pink flowers

- **Flowering period:** June to September
- **Habit and habitat:** It is an herbaceous plant. It can be found in bare, sandy and grassy places.

Medicinal uses

This whole plant is used for its astringent and haemostatic properties. It is very effective in the treatment of uterine and other bleeding. Eating the roots and leaves of this plant can increase milk flow in nursing mothers. Sores and rashes may be treated by applying its chewed root on effected areas. A tea of its leaves is used as diaphoretic and diuretic. It is also useful for the treatment of typhoid fever.

(24) *Euphorbia hirta* L.

- **Family:** Euphorbiaceae.
- **Common name:** Lmbi dhodhi.
- **Part used:** Leaves and milky latex.
- **Flowering period:** May to August.
- **Habit and habitat:** It is a wild terrestrial herb.

Medicinal uses

The extract of leaves is used for treatment of asthma, cough, sores, dysentery and diarrhea. This plant is also applied for wounds and lip cracks. Milk of this plant is used to treat sexual disorders.

(25) *Ficus virgata* Wall. ex Roxb.

- **Family:** Moraceae
- **Common name:** Phagwara
- **Part used:** whole plant
- **Flower color:** Orange yellow
- **Flowering period:** April–November
- **Habit and habitat:** It is a deciduous tree found in waste places along with cultivated fields in clay soil.

Medicinal uses

Plant is mostly used to treat diseases like Vision disorders, skin infections, pimples, and lesions.

(26) *Fumaria indica* Hausskn

- **Family:** Fumariaceae
- **Common name:** papra
- **Part used:** whole Plant
- **Flower color:** pale-pinkish to whitish
- **Flowering period:** April to May
- **Habit and habitat:** It is an annual herb, found at high elevation and moist places.

Medicinal uses

The plant is sold with the name of pitpapra in markets. It is used to treat aches and pains, diarrhea, fever, influenza and liver complaints. The herb is mixed with honey to prevent vomiting. The plant as a dry form is also is mixed with black pepper and used as an anthelmintic, diuretic and diaphoretic and for jaundice; it.

(27) *Galium asperifolium* Wall.

- **Family:** Rubiaceae
- **Common name:** Rough-Leaved Clivers
- **Part used:** leaves
- **Flower color:** white
- **Flowering period:** June–September.
- **Habit and habitat:** perennial much branched herb, sloping meadow

Medicinal uses

The plant is used as a tonic for improving good health.

(28) *Geranium rotundifolium* L.

- **Family:** Geraniaceae
- **Common name:** Ratan-jot
- **Part used:** root
- **Flower color:** pink
- **Flowering period:** April to June
- **Habit and habitat:** herb, found at hedge banks and wall tops etc.

Medicinal uses

This plant has astringent and diuretic properties. The powdered roots mixed with sugar and milk are used for relieving pain in joints and also as antispasmodic. Powdered root mixed with brown sugar is used against blockage of urine/ used to promote urination.

(29) *Indigofera cassioides* Rottler ex DC.

- **Family:** Fabaceae
- **Common name:** Cassia Indigo
- **Part used:** root
- **Flower color:** bright pink
- **Flowering period:** March to May
- **Habit and habitat:** Cassia Indigo is an erect shrub, found in wet areas.

Medicinal uses

The extract of roots is used to treat the coughs. The dried root is also used to applied externally to cure the pains in the chest.

(30) *Malva neglecta* Wallr.

- **Family:** Malvaceae
- **Common name:** Panerak
- **Part used:** leaves and flowers
- **Flower color:** pale pink to nearly white
- **Flowering period:** May to September
- **Habit and habitat:** Forb/herb, mostly found at waste and cultivated ground, usually on dry soils, frequently in coastal habitats,

on dry walls or as a weed of cultivated ground.

Medicinal uses

The plant is used as antiphlogistic, astringent, demulcent, diuretic, emollient, expectorant and laxative, a tea can be made from the leaves, flowers or roots is used as a diet. The leaves and flowers are also used for bruises, inflammations, insect bites etc., or applied internally to treat diseases linked to the respiratory system. The plant also has excellent laxative properties especially for young children.

(31) *Mentha arvensis*

- **Family:** Lamiaceae
- **Common name:** Podina
- **Part used:** whole plant
- **Flower color:** white to light purple or pink
- **Flowering period:** July to August
- **Habit and habitat:** A herb, that found at arable land, heaths, damp edges of woods

Medicinal uses

This plant has antiseptic properties and it is a useful product for digestion. It is not good for pregnant women because high doses can cause an abortion. The whole plant contains anesthetic, antiphlogistic, antispasmodic, antiseptic, aromatic, carminative, diaphoretic, emmenagogue, galactofuge, refrigerant, stimulant and stomachic properties. Traditionally the leaves are used to make tea which is helpful for the treatment of fevers, headaches, digestive disorders and many other minor diseases. The leaves are considered as a classical medicine for the treatment of stomach cancer.

(32) *Medicago orbicularis* L.

- **Family:** Fabaceae
- **Common name:** Button clover,

- **Part used:** whole plant
- **Flower color:** yellow
- **Flowering period:** March to May
- **Habit and habitat:** herb, found on very high elevation

Medicinal uses

The plant is used for heart diseases and shortness of breath.

(33) *Micromeria biflora* Benth.

- **Family:** Lamiaceae
- **Common name:** Ban ajwain
- **Part used:** whole plant
- **Flower color:** light pink
- **Flowering period:** almost throughout the year
- **Habit and habitat:** herb and a frequent plant found in different kinds of habitats, from the plains up to 2400 m.

Medicinal uses

The flowers and leaves are utilized for tea. A root paste is pressed among the jaws for the treatment of toothache. The plant is also used to treat nose bleeds and wounds. The plant juice is also useful in the treatment of sinusitis.

(34) *Olea ferruginea* Royle

- **Family:** Oleaceae
- **Common name:** Khona
- **Part used:** Fruits, leaves and trunk
- **Flower color:** whitish
- **Flowering period:** April to May, sometimes September
- **Habit and habitat:** A common evergreen tree, found as self-growing plant in waste places in dry clay loam of lower elevations.

Medicinal uses

Fruit of this plant is eaten and used as antidiabetic, and leaves are used for

their toothache-relieving, astringent, antiseptic, diuretic and antiperiodic properties.

(35) *Otostegia limbata* (Benth.) Boiss

- **Family:** Lamiaceae
- **Common name:** Koi booi
- **Part used:** whole plant
- **Flower color:** pale yellow with orange throat
- **Flowering period:** April-June
- **Habit and habitat:** A shrub, mostly found in waste and dry places in dry soil.

Medicinal uses

The whole plant is used for mouth sores, throat pains, and wound healing. The plant is also used as firewood when dry.

(36) *Oxalis corniculata* L.

- **Family:** Oxalidaceae.
- **Common name:** Khati booti,
- **Part used:** whole plant.
- **Flower color:** yellow
- **Flowering time:** March
- **Habit and habitat:** wild herb and terrestrial.

Medicinal uses

To stimulate appetite and to aid digestion the fresh leaves of this plant are eaten as vegetable.

(37) *Plantago lanceolata* L.

- **Family:** Plantaginaceae
- **Common name:** Ribwort
- **Part used:** leaves
- **Flower color:** white
- **Flowering period:** April to August

- **Habit and habitat:** It is an herbaceous perennial plant. Very commonly found on pastures, roadsides, banks, waste places, preferring dry sandy soil. Present in all the temperate world.

Medicinal uses

This plant is used for blood purification, to stimulate the liver and cleanse the blood. It is useful for all kinds of liver problems, like poor digestion and assimilation, hepatitis, jaundice, skin eruptions and eruptive personalities. It is a very useful medicine for bites and stings of insects, boils and additional eruptive skin problems and any deep-seated infections.

(38) *Polygonum viviparum* L.

- **Family:** Polygonaceae
- **Common name:** Alpine bistort
- **Part used:** root and leaves
- **Flower color:** white or pink
- **Flowering period:** June to September
- **Habit and habitat:** An herbaceous perennial found in grassy slopes and alpine steppes (1200-5100 m).

Medicinal uses

Its medicinal use is reputedly interchangeable with the pink plumes. The root is edible, high in starch with a flavor of almonds and used as much as the pink plumes. The leaves may be cooked in soups or eaten raw in salads.

(39) *Ranunculus laetus* Wall. ex Hook. F & Thoms

- **Family:** Ranunculaceae
- **Common name:** Chambel booti,
- **Part used:** leaves
- **Flower color:** yellow
- **Flowering period:** April to May

- **Habit and habitat:** A perennial herb, usually found in wet places along waterways.

Medicinal uses

This plant use to cure skin infections (chambal); and to eradicate germs in dog and cattle wounds.

(40) *Rosa webbiana* Wall. exRoyle

- **Family:** Rosaceae
- **Common name:** Jungli gulab
- **Part used:** flower
- **Flower color:** strong pink with white centre
- **Flowering period:** once in a year
- **Habit and habitat:** shrub, found at rocky slopes in arid areas, in grassy places, among forest, in scrub, in valleys or near farmlands at elevations of 2000 - 4500 meters.

Medicinal uses

This plant has anthelmintic properties.

(41) *Rubus fruticosus* Hook.

- **Family:** Rosaceae
- **Common name:** Akhray
- **Part used:** leaves, root and fruit
- **Flower color:** white
- **Flowering period:** April to June

Medicinal uses

A mixture of leaves is used for diarrhea and some bleedings. Extract of roots is used as a medicine for dysentery and to aid in bowel movement. This extract is also helpful against whooping cough in its spasmodic stage. Black berries extract and wine are used for painful throat.

(42) *Rumex hastatus* D. Don

- **Family:** Polygonaceae
- **Common name:** Khatimmer
- **Part used:** roots and leaves.
- **Flower color:** white
- **Flowering period:** July to September
- **Habit and habitat:** herb and found in moist soil.

Medicinal uses

The extract of roots by boiling in water is very useful against jaundice. Fresh leaves are used by the native people as the ethno-phytotherapeutic treatment against stinging nettle (*Urtica dioica*).

(43) *Rumex acetosa* L.

- **Family:** Polygonaceae
- **Common name:** garden sorrel
- **Part used:** leaves and stem
- **Flower color:** reddish-green
- **Flowering period:** summer
- **Habit and habitat:** herb

Medicinal uses

The leaves in most species have oxalic acid and tannin, and many have astringent and slightly purgative qualities.

(44) *Solanum surattense* Burm. f.

- **Family:** Solanaceae
- **Common name:** Mokri
- **Part used:** whole plant.
- **Flower color:** purple
- **Flowering period:** April to October.
- **Habit and habitat:** wild herb and terrestrial.

Medicinal uses

The plant extract is used to treat sore throat, body pains and fever, rheumatism, cough and chest complaints.

The ripe fruits are straight positioned among the aching teeth for few minutes to relieve pain. The boiled seeds in milk are useful for stomach pain.

(45) *Solanum nigrum* L.

- **Family:** Solanaceae
- **Common name:** Kanch-mach
- **Part used:** leaves, berries and stem
- **Flower color:** white
- **Flowering period:** February to March
- **Habit and habitat:** wild herb and terrestrial

Medicinal uses

Leaves are energetic and used to treat backbone pain. The fruits of this plant are eaten to cure abdominal pain and also have laxative properties. Both leaves and berries are used in the treatment of heart diseases and fever, rheumatism, joint pains, enlargement of spleen, liver and hepatitis. Stem is considered very useful for mouth problems.

(46) *Trifolium repens* L.

- **Family:** Fabaceae
- **Common name:** White Clover
- **Part used:** whole plant
- **Flower color:** white or cream to pinkish-tinged
- **Flowering time:** May to October
- **Habit and habitat:** a weedy herbaceous plant

Medicinal uses

The plant is mostly used as antirheumatic, antiscrophulatic, depurative, detergent and tonic. A mixture has been used to treat coughs, colds, fevers and leucorrhoea. The extract of the flowers has been used as eyewash.

(47) *Urtica dioica* L.

- **Family:** Urticaceae
- **Common name:** Kayyari
- **Part used:** whole plant
- **Flower color:** Green, yellow green
- **Flowering period:** August to September

Medicinal uses

The plant has diuretic, astringent, tonic and anti-inflammatory properties. It can cause an allergy which can be relieved by rubbing the leaves of *Rumex nepalensis*.

(48) *Verbascum thapsus* L.

- **Family:** Scrophulariaceae
- **Common name:** Mullein
- **Part used:** whole plant
- **Flower color:** yellow
- **Flowering period:** June to August
- **Habit and habitat:** an herb; it has been found all over the temperate world.

Medicinal uses

The plant is extensively used for treatment of diseases due to its emollient and astringent properties. It is very effective for coughs and related problems and is useful against a variety of skin problems.

(49) *Viburnum continifolium* D.Don.

- **Family:** Caprifoliaceae
- **Common name:** Guch
- **Part used:** leaves, and fruits
- **Flower color:** near white, white
- **Flowering period:** April to May
- **Habit and habitat:** Amongst oak and deodar in forests and shrubberies, affecting open spaces on the rather drier exposures

Medicinal uses

Fruit of this plant is used as laxative and for the purification of blood while leaves extract is useful for menorrhagia.

(50) *Viola canescens* Wall. exRoxb.

- **Family:** Violaceae
- **Common name:** Himalayan White Violet
- **Part used:** whole plant
- **Flower color:** white and violet
- **Flowering period:** March to June.
- **Habit and habitat:** It is a nearly prostrate herb found in the Himalayas

Medicinal uses

In vitro, the anti-plasmodial sensitivity of plant extracts was observed. Flowers and leaves are used for the treatment of cough, cold, fever and jaundice.

DISCUSSION

Ethnobotany is crucial for conservation of plants with medicinal value and risk of over-harvest (Bopana and Saxena, 2007). This is in favor of the future generations, so that they may take advantage from this treasure of God, which is a true reward and blessing of nature for mankind.

In this study, a total of 50 wild plants belonging to 31 different families were collected from the study area. Most of the plant species examined during the survey were dicotyledonous. The most frequently observed plant species belonged to family Asteraceae, Lamiaceae and Amaranthaceae, having 4 species each. While polygonaceae had 3 species. Malvaceae, Rosaceae and Geranaceae had 2 species each. While the rest of the families contributed only one species each. A total of 50 species were collected and documented from research area, out of these 21 plants were used as diuretic, 29

astrigent, 9 expectorant, 18 tonic, 18 stimulant, 7 emollient, 16 laxative, 4 antispasmodic, 5 purgative, 1 anti-dyspeptic, 7 anti-diarrhea, 11 anthelmintic, 11 carminative, 7 anti-inflammatory and also for some other diseases as well (Nasir et al., 1970-2004; Said, 1996; Ahmad, 2000; Bokhari et al., 2013).

Abutilon indicum and *Achillea millefolium* are plants that are used for the treatment of more than 7 diseases. *Abutilon indicum* is diuretic, astrigent, tonic, expectorant, anthelmintic, laxative and anti-inflammatory while *Achillea millefolium* is used for its diuretic, astrigent, tonic, expectorant stimulant, anti-spasmodic, anti-diarrheal and anti-inflammatory properties.

In present period, it is alarming for us that the knowledge of ethnobotany is vanishing quickly. Westernization, fall down of conventional cultures and devastation of entire cultural groups is responsible (Bussmann and Sharon, 2006). A most important aim of this kind of study is to make sure that native natural history turns out to be a living custom in communities and is being passed on in word form from time to time. The results of this work can later on be utilized for conservation of biodiversity and for community development (Martin, 1995; Qureshi et al., 2009).

The main objective of the present study was to document the native knowledge of wild plants of selected sites of Muzaffarabad and provide scientific foundation for additional research especially linked to identification of medicinal value of each plant in the study.

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